GOAL 3: SAFE FOOD

The foods Americans eat will be free from unsafe pesticide residues. Particular attention will be given to protecting subpopulations that may be more susceptible to adverse effects of pesticides or have higher dietary exposures to pesticide residues. These include children and people whose diets include large amounts of noncommercial foods.

PROGRESS TOWARD THE STRATEGIC GOAL AND OBJECTIVES

EPA continues to make progress toward its long-term goals of protecting the Nation's food supply, reducing risk from unsafe pesticide residues, and eliminating the use on food of pesticides that do not meet standards through registration and reregistration of pesticides. EPA sets limits, called tolerances, on the amount of pesticides that may remain on foods. Tolerances are set on the basis of risk assessments pursuant to the Food Quality Protection Act (FQPA) of 1996.[1] Through tolerance reassessments, EPA ensures that existing tolerances meet the FQPA standard of reasonable certainty of no harm.[2] Those that do are either revoked or have additional risk mitigation measures added to them. EPA's consideration of cumulative risk takes into account exposure from all pesticides that have a common mode of action, thereby adding additional protection. The inclusion of aggregate risk considerations in the risk assessments provides further protection.[3]

In FY 2002 EPA's strategy for reducing risks from pesticide residues in foods included:

- Reevaluating older, potentially higher-risk pesticides by using the best current scientific data and methods to determine what additional limits on each pesticide's use are needed to provide reasonable certainty of no harm, especially to children and other sensitive subpopulations. In FY 2002 EPA reevaluated 2,667 tolerances for older pesticides.
- Accelerating EPA's review and registration of alternative pesticides that are less risky than those currently in use. In FY 2002 EPA registered 15 reduced-risk pesticides.
- Using partnerships and other means to promote the adoption and use of lower-risk pest management methods. EPA continued or launched a variety of partnership efforts in FY 2002.

A key element in meeting these objectives and thus demonstrating performance results is the availability of baseline data. EPA, the Florida State University, and the National Pollution Prevention Roundtable worked cooperatively in 2002 to identify data sets and potential performance indicators and measures in the challenging pollution prevention area. Tribal program measures were another area of continuing focus. This work builds on EPA's and Florida State University's efforts to inventory and describe environmental outcome measures nationwide for federal agencies, states, tribes, and local government entities. The statute requires EPA to examine each pesticide individually, unless there is a class of pesticides with a common mechanism of toxicity. The data sets and hazard and exposure findings for the pesticides that are reviewed cannot be aggregated into a national baseline. The program is continuing to analyze federal and other data sets, as well as internal risk assessment methodologies, to explore options to identify baseline data without posing enormous data collection burdens and expense on EPA's partners.

The program is very science-oriented and constantly works to incorporate the latest scientific methodologies. Additional challenges include addressing resource issues associated with the expiration of the maintenance fee, the timely receipt of stakeholder input, and the need for more intensive risk assessment reviews prompted by the incorporation of cumulative and aggregate risk work.

The Agency has collaborated extensively with scientists from other federal agencies, academia, and the private sector, including members of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Scientific Advisory Panel. These collaborative efforts involved the Agency's regulatory decision-making responsibilities and particularly complex work in the evolving field of biotechnology and new science policies for risk assessments. These efforts provide opportunities to review the Agency's processes, scientific methodologies, and in some cases assessments and to ensure transparency, as required by the FQPA. Such a review conducted on certain biotechnology issues has led to the creation of a multi-agency, department-level work group to improve coordination and outreach to the agriculture industry.

FY 2002 PERFORMANCE

Reducing Agricultural Pesticide Risk

Older registered pesticides might cause health problems such as birth defects, nerve damage, and cancer after long-term exposure. In addition, some pesticides might adversely affect indigenous populations of birds, fish, mammals, beneficial insects, and other sensitive species that are not targets for pesticide applications. Consequently, EPA seeks to eliminate or reduce human health and environmental risks by encouraging substitution of less risky pesticides for older chemicals that have the potential to cause these adverse effects.

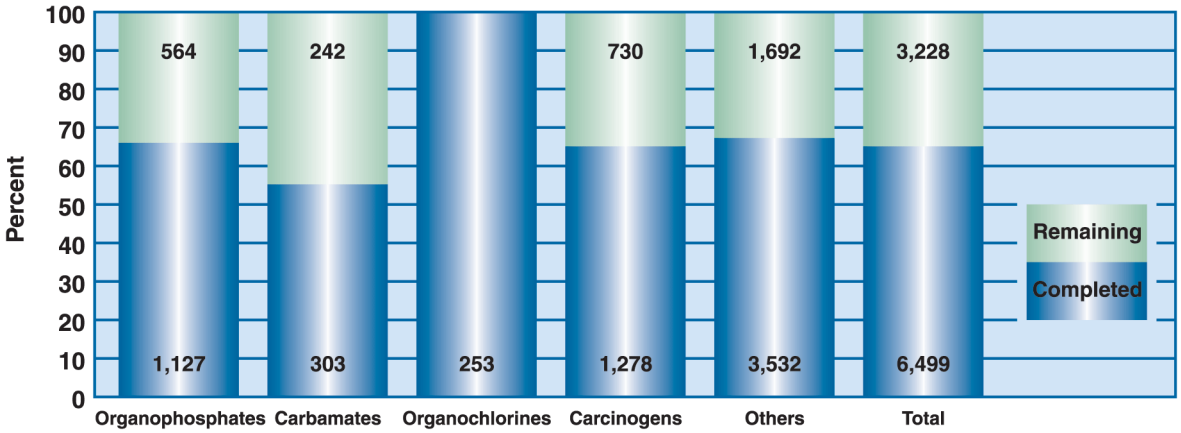
Reduced risk pesticides constituted an estimated 3.6 percent of all agricultural pesticide acre treatments in 1998. This increased to 7.5 percent during the FY 2002 reporting period that used FY 2001 data, significantly exceeding EPA's original annual and long-term targets. However, two reduced risk pesticides—glysophate and s-metalachlor—account for about 50 percent of the pesticides used. The Agency anticipates that the growth rate of this measure, which depends on how quickly the agriculture and pesticide industries make the transition, might slow in the next year or two. EPA encourages the switch to the use of safer pesticides through outreach programs, applicator training, and the provision of grants for integrated pest management and environmental stewardship projects. The Agency reviews pesticides to ensure that they meet the current health and safety standards and provides incentives for the registration and adoption of reduced risk pesticides; however EPA has limited impact on the adoption of these pesticides. This is due in part to farmers' preference for using broad-spectrum pesticides that tend to be cheaper and easier to apply. It is, therefore, difficult for the Agency to predict with accuracy the extent of adoption of reduced risk pesticides.

Reducing Use on Food of Pesticides Not Meeting Health Standards

EPA continued its ongoing comprehensive reviews of pesticides initially registered before November 1, 1984, to ensure their continued safety. After a thorough review of the data, the Agency issues a Reregistration Eligibility Decision (RED). In cases where pesticides do not meet health and environmental requirements, EPA determines what changes are needed in the allowable uses of the pesticides, including canceling use or limiting use to certified applicators. For pesticides that do meet the new standards, the issuance of a RED makes the products eligible for reregistration. By the end of FY 2002, EPA completed review of 72.7 percent of the 612 cases requiring reregistration. The Agency did not meet the target of 76.4 percent because of both the need to incorporate into the process the cumulative risk assessment required by the FQPA and the redirection of resources to support the homeland security initiative on anthrax contamination. The cumulative risk assessment under the FQPA requires a more intensive review and also requires that pesticides having a common mode of action be reviewed together.

To further protect the Nation's food supply, the FQPA set stricter safety standards for pesticide residues in or on food and requires EPA to reassess all existing tolerances by 2006 to ensure they meet the new safety standard of "reasonable certainty of no harm." By the end of FY 2002, the Agency had completed reassessment of 66.9 percent of these tolerances, including

Tolerance Reassessments That Now Meet New Health Standards as of August 2002



This graph shows the status of EPA's tolerance reassessment program by chemical class. As of August 5, 2002, EPA had reassessed 6,499 tolerances (66.9%).

about 65 percent of the organophosphates and carcinogens that are among those pesticides considered of highest risk. The reassessment of these tolerances included an additional 198 of the 893 tolerances on children's foods. In FY 2002 EPA met the second statutory deadline set by FQPA for tolerance reassessment, and the Agency is on track to meet its long-term objective to substantially eliminate pesticides that do not meet the FQPA standard and to reduce dietary risk to children.

In FY 2002 EPA completed a total of 36 reregistration regulatory decisions, including 9 risk mitigation decisions on the most hazardous organophosphates (OPs). EPA met the decision deadlines set by the Natural Resources Defense Council (NRDC) agreement for FY 2002 (five completed in FY 2002) with one exception, atrazine, for which an extension to 2003 has been requested. These decisions were completed after extensive public participation and negotiations.[4]

FQPA requires that EPA take into account the cumulative effects of pesticide residues and other substances that have a common mechanism of toxicity when setting tolerances. EPA completed and issued the preliminary organophosphate cumulative risk assessment in December 2001 and revised it in June 2002 based on stakeholder input. As a result, EPA met the NRDC agreement deadline to issue a revised risk assessment of the OPs by August 2002. This methodology incorporated new standards and represents a new way of analyzing data regarding potential exposure to pesticides and

REDUCING RISK THROUGH REGULATORY ACTIONS

During FY 2002 EPA significantly reduced exposure to several organophosphate (OP) pesticides by completing regulatory actions such as issuance of Reregistration Eligibility Decisions (RED). OPs are older, widely used pesticides that are among the riskiest. Benefits derived from this action include reduced exposure, assumed reduced risk, and therefore improved protection of human health and the environment. The pesticides involved included azinphos-methyl, diazinon, dicrotophos, disulfoton, fenamiphos, methamidophos, naled, phosmet, and tetrachlorvinphos. Azinphos-methyl risk reduction measures were taken in 1999 to reduce dietary risk to children. Additional measures were taken in FY 2002 to further reduce risk to agricultural workers and the environment. For phosmet, which is used on orchard fruits, nuts, and other crops, additional measures were identified to reduce risk to agricultural workers, including requiring personal protective equipment and enclosed cabs. Ecological risk reduction measures included revising labels, limiting application amounts, prohibiting application during bloom, and canceling some uses.

the risks they might pose and is the result of rigorous scientific analysis and extensive public participation.

Research Contributions

In FY 2002 EPA produced exposure and effects data and models to support the August 2006 assessment of current uses of pesticides (tolerance reassessment) required under the FQPA. This research was part of an ongoing collaborative effort with the National Institute of Environmental Health Sciences to study outcomes of developmental exposure to pesticides on the nervous, immune, and reproductive systems. These efforts have provided the Agency with a better understanding of the increased vulnerabilities of children to pesticide exposure through food consumption as well as during gestation. As a result, EPA can better determine the latent and/or persistent effects of developmental exposure to pesticides and compare the sensitivities of different human systems to various pesticides. The data and models will also help EPA examine the critical factors influencing children's exposure to pesticides and fill important data gaps to reduce uncertainties in future pesticide risk assessments. In addition, EPA developed a source-to-dose modeling framework that will advance the science of human exposure and dose assessment by describing the routes, magnitude, and variability of human exposures and doses, as well as by characterizing the way people interact with their environment.

STATE AND TRIBAL PARTNERSHIP CONTRIBUTIONS

State Contributions

Through grant agreements, and with guidance provided by EPA, the states enforce federal and state laws, maintain pesticide laboratory operations, train and certify commercial and private pesticide applicators, and develop groundwater pesticide management plans to protect groundwater from contamination. States play a pivotal role in ensuring that food use and other pesticides are used according to the label instructions, and that applicators who apply restricted use pesticides are adequately trained. In FY 2002 states submitted more than 500 emergency exemption requests to EPA in response to emergency pest problems, each of which the Agency reviewed for compliance with FQPA health-based standards. Use of the emergency exemption process generates a savings in excess of $1 billion per year to the U.S. economy, according to estimates from the Inter-Regional Four (IR-4) program, which promotes increased availability of less risky pesticides for use on foods.

EPA supports a state-led project providing training on pesticide safety for farmworkers and farm families by partnering with the Association of Farmworker Opportunity Programs, AmeriCorps, and 37 community-based organizations in 22 states. EPA also consults with the Association of American Pesticide Control Officials and shares information with the State FIFRA Issues Research and Evaluation Group, a network of state officials interested in federal/state co-regulation of pesticides. In FY 2002 EPA and California's Department of Pesticide Regulation Workshare Program conducted data review for IR-4 petitions, which has expedited federal and state minor use registrations and resulted in establishment of tolerances for many crop uses. Most fruits and vegetables are actually "minor use" crops, such as corn and peaches, and industry does not support the science to establish tolerances because it is costly.

Tribal Contributions

EPA continues to work closely with its tribal partners, including members of the Tribal Pesticide Program Council (TPPC) and others, to create risk assessment models that capture the chemical exposure opportunities that may uniquely attend traditional native American lifeways. To support this endeavor, in FY 2002 EPA launched a pilot project to create two new software modules for the state-of-the-art risk assessment software—LifeLine. The tribes in the Nivalena consortium near Alaska's Lake Iliamna, and the Blackfeet Reservation in Montana are working with EPA to provide data to incorporate into the software that will model risks to those

populations. The Tribal Medicine Project (TMP) is another important tribal risk project supported by EPA. The TMP sends teams of experts on pesticide exposure risks and symptoms to Indian country, where they encourage greater community awareness of potential pesticide-related hazards and train tribal health care providers to identify, prevent, and treat toxic exposure. There are about 40 tribes with ongoing pesticide programs. Since tribes are sovereign governments, there is an increase in both human health and environmental protection when a pesticide program is implemented, where the need is identified. When a tribe implements a continuing program, it commits to a pesticide use compliance program plan, with either direct enforcement under tribal code or by referral to EPA in the absence of a specific code.

ASSESSMENTS OF IMPACTS OF FY 2002 PERFORMANCE ON FY 2003 ANNUAL PERFORMANCE PLAN

As a result of exceeding FY 2002 performance, the Agency revised its FY 2003 targeted percentage of acre-treatments that used reduced risk pesticides and will likely adjust the 2004 target. Because the Agency missed its FY 2002 targets for Registration Eligibility Decisions and Product Reregistrations, EPA adjusted its FY 2003 targets and an adjustment to FY 2004 targets is likely.

Goal 3: Safe Food

Summary of FY 2002 Annual Performance Goals

3 Goals Met	1 Goals Not Met	1 Data Lags

A description of the quality of the data used to measure EPA's performance can be found in Appendix B.

FY 2002 Obligations *(in thousands)*:	
EPA Total:	$9,447,202
Goal 3:	$112,374
Goal 3 Share of Total:	1.2%

FY 2002 Costs *(in thousands)*:	
EPA Total:	$7,998,422
Goal 3 Costs:	$128,817
Goal 3 Share of Total:	1.6%

Refer to page I-13 of the Overview (Section I) for an explanation of difference between obligations and costs.
Refer to page IV-10 of the Financial Statements for a consolidated statement of net cost by goal.

Annual Performance Goals (APG) and Measures FY 1999–FY 2002 Results

Strategic Objective: By 2006, Reduce Public Health Risk From Pesticide Residues in Food From Pre-Food Quality Protection Act (FQPA) Levels (Pre-1996).

FY 2002 Cost (in thousands): $47,093 (36.6% of FY 2002 Goal 3 Total Costs)

Progress Toward Strategic Objective: Since 1996, the year FQPA was enacted, EPA has made substantial progress toward reducing risk from pesticide residues in food. More than 100 safer pesticides—those which pose less risk to human health and the environment than conventional chemical pesticides—have been registered, substantially increasing the tools farmers have at their disposal to protect human health and the environment while ensuring productive agricultural yields. At the same time, use of pesticides that have the highest potential to cause cancer and neurotoxic effects has declined by more than 15% based on survey data. The increasing number of safer pesticides on the market, and the increasing number of acre-treatments using such pesticides, ensure that EPA is on track to meet its revised objective to reduce public health risk from pesticides in food from pre-FQPA levels.

APG 18	Decrease Risk from Agricultural Pesticides	Planned	Actual
FY 2002	**Decrease adverse risk from agricultural uses from 1995 levels and assure that new pesticides that enter the market are safe for humans and the environment through ensuring that all registration actions are timely and comply with standards mandated by law. Goal Met.**		
	Performance Measure		
	- Register safer chemicals and biopesticides (cumulative).	**105**	**107**
FY 2001	*Same Goal, different targets. Goal Not Met.*		
	Performance Measure		
	- Register safer chemicals and biopesticides.	*96*	*92*
FY 2000	*Decrease adverse risk from agricultural uses from 1995 levels and assure that new pesticides are safe by such actions as registering 6 new chemicals, 2,200 amendments, 600 me-toos, 200 new uses, 45 inerts, 375 special registrations, 225 tolerances and 13 reduced risk chemicals/ biopesticides. Goal Met.*	*6* *2,200* *600* *200* *45* *375* *225* *13*	*6* *3,069* *1,106* *427* *95* *458* *452* *16*
FY 1999	*Decrease adverse risk from agricultural pesticides from 1995 levels and assure new pesticides that enter the market are safe for humans and the environment. No Data.*		--

FY 2002 Result: In FY 2002 EPA continued to register pest control products, including "safer" pesticides, thus ensuring that growers have an adequate number of pest control options available to them.

APG 19	Reduce Use of Highly Toxic Pesticides	Planned	Actual
FY 2002	**Detections of residues of carcinogenic and cholinesterase inhibiting neurotoxic pesticides on foods eaten by children will have decreased by 15% (cumulative) from their average 1994 to 1996 levels. Data Lag.**	**15%**	**data available in 2003**

FY 2002 Result: Data lag. Data will be available for the FY 2003 Annual Report.

APG 20	Reduced Risk Pesticides	Planned	Actual
FY 2002	**At least 1% of acre-treatments will use applications of reduced risk pesticides. Goal Met.**	1%	7.5%

FY 2002 Result: Targets for this annual goal were developed without the benefit of experience on their adoption by growers or the impact of improvements in the registration process. The use of two herbicides—glyphosate and s-metalachlor—greatly exceeded expectations and contributed to surpassing the target.

Strategic Objective: By 2008, Use on Food of Current Pesticides That Do Not Meet the New Statutory Standard of "Reasonable Certainty of No Harm" Will Be Eliminated.

FY 2002 Cost (in thousands): $81,724 (63.4% of FY 2002 Goal 3 Total Costs)

Progress Toward Strategic Objective: EPA is well on the way to meeting the revised objective to substantially eliminate, by 2008, the use on food of pesticides that do not meet the "reasonable certainty of no harm" standard of the FQPA. Since 1996, 66.9% of the 9,721 tolerances (legal pesticide residue levels on food) have been reassessed using the new standard. More than 72% of 612 reregistration eligibility decisions have been completed. In particular, the risk of pesticides used on foods frequently eaten by children is decreasing, in part through work conducted in EPA's tolerance reassessment program.

APG 21	Reassess Pesticide Tolerances	Planned	Actual
FY 2002	**By the end of 2002 EPA will reassess a cumulative 66% of the 9,721 pesticide tolerances required to be reassessed over 10 years. This includes 67% of the 893 tolerances having the greatest potential impact on dietary risks to children. Goal Met.**	**66%** **67%**	**66.9%** **65.6%**
FY 2001	*Same Goal, different targets. Goal Not Met.*	*40%* *46%*	*40%* *44%*
FY 2000	*EPA will reassess 20% of the existing 9,721 tolerances to ensure that they meet the statutory standard of "reasonable certainty of no harm." Goal Not Met.*	*1,250*	*121*
FY 1999	*Under pesticide reregistration, EPA will reassess 19% (or 1,850) of the existing 9,700 tolerances (cumulative 33%) for pesticides food uses to meet the new statutory standards of "reasonable certainty of no harm." Goal Not Met.*	*1,850*	*1,445*

FY 2002 Result: The Agency met its statutory and GPRA deadlines and targets for reassessing tolerances in FY 2002. (Tolerances in general are the major portion of the work, and the children's tolerances are a small subset.) Reassessing these tolerances helps ensure that pesticide residues on foods are safe. EPA expects all 9,721 pesticide tolerances, including the 893 tolerances of special concern to children, to be reassessed by the statutory deadline, August 2006.

APG 22	Review Pesticides' Active Ingredients	Planned	Actual
FY 2002	**Assure that pesticides' active ingredients registered prior to 1984 and the products that contain them are reviewed to assure adequate protection for human health and the environment. Also consider the unique exposure scenarios such as subsistence lifestyles of Native Americans in regulatory decisions. Goal Not Met.**		
	Performance Measures		
	- Product Reregistration.	**750**	**314**
	- Reregistration Eligibility Decisions (REDs) (cumulative).	**76.4%**	**72.7%**

FY 2002 Result: Cumulative risk assessment is a new area of science that requires extensive peer review and several iterations before becoming final. The cumulative risk assessments themselves are a resource-intensive and time-consuming process. Also, in FY 2002 funding was redirected to review and test pesticides for efficacy against anthrax. These factors delayed reregistration efforts. REDs are done in tandem with the tolerance reassessments and all 612 REDs are on track to be completed by August 2006. Product reregistrations are generally completed 2 years after the RED is done. Therefore, the Agency is on track to complete product reregistrations by 2008. The total number of REDs completed to date is 443; 169 remain to be done. The relationship of product registration to REDs is that one RED can result in any number of product registrations (from one to many). Fewer REDs completed will result in fewer future product registrations. Because the Agency missed its FY 2002 targets for REDs and Product Reregistrations, EPA adjusted its FY 2003 targets and an adjustment to FY 2004 targets is likely.

FY 2001 Annual Performance Goals (No Longer Reported for FY 2002)

Provide timely decisions to the pesticide industry on the registration of active ingredients for conventional pesticides including tolerance setting, product registrations and inert ingredients.

Notes:

1. Tolerances and Exemptions for Pesticide Chemical Residues, Food Quality Protection Act of 1996, sec. 408 [6a](a) Requirement for Tolerance or Exemptions.

2. The new safety standard, provided in section 408(b)(2)(A)(ii) of the FQPA, is a "reasonable certainty of no harm" standard for aggregate exposure using dietary residues and all other reliable exposure information.

3. U.S. EPA, The Office of Pesticide Programs' Policy on Determination of the Appropriate FQPA Safety Factor(s) for Use in the Tolerance-Setting Process, draft document, 64 FR 48617 (Washington, DC: Office of Pesticide Programs, Office of Prevention, Pesticides, and Toxic Substances, May 10, 1999). Available at http://www.epa.gov/scipoly/sap/1999/may/10xpoli.pdf.

4. C.T. Whitman, Directive on Implementation of EPA Obligations Under the Consent Decree in *NRDC* v. *Whitman*, March 19, 2001.